

horn, with one angle directed forwards. At the upper side of the base of the beak is a bright red band of soft tissue, like an attempt at a "comb," such as is possessed by an ordinary rooster, only transversely placed. The whole is a handsome bird of heavy gait, absolutely unable to use its wings for their natural purpose of flying. Indeed, one of the interests of the bird zoologically is that, like several native birds of New Zealand, it is flightless, though its congeners in other countries are able to fly. The Takahe is closely allied to the Pukeko, and not far removed from the Brown Woodhen; all these belong to the family of Rails, which usually frequent more or less marshy ground, and in countries other than New Zealand are able to fly as well as other birds. On the other hand, the Takahe can run very actively, and its powerful beak must be a formidable weapon, which it could use with effect on enemies when at close quarters.

The specimen captured in 1898 is a young female, of practically the same size as the bird examined by Sir W. Buller twenty years earlier. The first specimen of the bird ever captured was taken in 1849, and its skin is now in the British Museum (Natural History). The second was caught in 1851, and is also in the British Museum collection. The third was captured in 1879—nearly thirty years after the second had been taken—and its remains were purchased by the Dresden Museum for one hundred guineas. The specimen caught in 1898 appears to be much the best yet obtained, and as much as 300*l.* was offered for it. The rarity of the *Notornis* and other members of the New Zealand fauna makes it essential, as Sir W. Buller points out in his paper, for naturalists to do everything in their power to possess, if not a few living representatives, at any rate a full life-history of the expiring forms.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

A COURSE of six free public lectures on "Prehistoric Chronology" will be delivered by Prof. Montelius at University College, London, on Tuesdays and Fridays at 4 p.m., beginning on Friday, May 4.

MR. J. F. HUDSON has been appointed mathematical lecturer at University College, Bristol, in succession to Mr. J. F. McKean, who has been appointed a mathematical lecturer at the Royal Naval Engineering College, Devonport. Mr. Hudson has for the past three years been assistant lecturer in Jesus College, Oxford, and assistant demonstrator of physics in the Oxford University Laboratory.

MR. W. TUCKER, C.B., a principal assistant secretary to the Board of Education, has retired from the service on reaching the age of sixty-five. The following promotions have been made in the office of the Board of Education:—Mr. J. White (assistant secretary) to be a principal assistant secretary; Mr. F. R. Fowke (assistant director for science), Mr. H. W. Hoare, Mr. W. I. Ritchie, and Mr. H. M. Lindsell to be assistant secretaries.

THE following appointments have been made by the Irish Department of Agriculture and Technical Instruction:—To be superintendent of statistics and intelligence branch, Mr. W. P. Coyne, professor of political economy and jurisprudence, University College, Dublin. To be inspector in agriculture, Mr. J. S. Gordon, Department of Agriculture, Edinburgh University, principal of the Cheshire County Council Agricultural and Horticultural School.

IN commemoration of the fiftieth anniversary of the foundation of the North London Collegiate School for Girls, and in honour of the late Miss Francis Mary Buss, a jubilee number of the school magazine was published on April 4. Mrs. Sophie Bryant, D.Sc., describes the foundation and growth of the school, and shows that it has been a very important factor in the development of secondary education for women. During the past twenty years 59 old students have passed Part I. of the Tripos examinations of the University of Cambridge, and 7 have passed Part II., while 10 have qualified for the ordinary degree. It is noteworthy that 33 of the 59 who passed Part I. took mathematics and natural science as their subjects, and 5 of those who went on to Part II. At Oxford University 9 old students have

passed the Honours Moderations (8 taking mathematics), and 8 have passed Final Honours. The College has 116 old students who are graduates of London University, 22 being Bachelors of Science, 4 Bachelors of Medicine, 2 Doctors of Science, and 1 Doctor of Medicine. Since the opening of the degrees of London University to women, 1220 women have graduated, and the North London Collegiate School claims 10 per cent. of this number as old students.

SCIENTIFIC SERIALS.

Bulletin of the American Mathematical Society, March.—Prof. Pierpont, in an article on mathematical instruction in France, gives an account of the way in which France is educating students who wish to become mathematicians, and indicates rapidly what positions a talented young man may hope to reach, how he attains them, and what his duties are in the various stages of his progress. He subsequently calls attention to the advantages which Americans can enjoy in studying mathematics in France, particularly in Paris. The article should be useful.—Prof. Ernest W. Brown reviews M. Poincaré's "Cinématique et Mécanismes, Potentiel et Mécanique des Fluides," the *Annuaire* of the Bureau des Longitudes for 1900, and the "Elements of Precise Surveying and Geodesy," by Mansfield Merriman.—Prof. F. Morley gives a sketch of E. Duporcq's "Premiers principes de Géométrie Moderne," a work to give students, who have some acquaintance with analytic geometry, a liking for the purely geometric point of view.—Prof. F. Cajori briefly notices "Opinions et curiosités touchant la Mathématique d'après les ouvrages Français des xvi^e, xvii^e, et xviii^e siècles," by G. Maupin (a work, apparently, which merits a place in a modern "Budget of Paradoxes"), and "La Mathématique: Philosophie, Enseignement," by C. A. Laisant.—The number closes with the usual items of "Notes" and "Publications."

THE March issue of the *Bulletin de la Société Astronomique de France* contains an interesting article on solar and lunar halos, with particulars and illustrations furnished by several contributors. Reproductions are given of two excellent photographs obtained by M. Basile de Balasny, at Poltava in Russia, one showing distinctly the halo, the other a definite column of light appearing as a prolongation of the sun above the horizon, the time being just after sunset. The same journal contains four photographs of the eclipse of the moon, December 16, 1899, by M. l'Abbé Moreux; M. Flammarion also continues his illustrated series of naked eye drawings of the moon.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, March 29.—"Certain Laws of Variation." By H. M. Vernon, M.A., M.D., Fellow of Magdalen College, Oxford. Communicated by Prof. Lankester, F.R.S.

In a former paper (*Phil. Trans.*, B, 1895, p. 577) it was shown that the ova of the Echinoid *Strongylocentrotus lividus* were extraordinarily sensitive to their environmental conditions at the time of impregnation. For instance, by keeping the mixed ova and sperm in water at about 26° or 8° C. for an hour, the plutei obtained after eight days' development were some 5 per cent. smaller than those from ova kept at about 20° at the time of impregnation.

By splitting up into groups the 20,600 measurements which have been made from time to time on *Strongylocentrotus* larvæ, according to the amount of effect which had been produced in their size by varying degrees of favourable and unfavourable environment, and by determining the average variability of the larvæ in each group, it was sought to prove the existence of a law of variability. This may be worded as follows:—"An organism varies least when it is best adapted to its surroundings, so that the less it is adapted the more variable does it become."

Entomological Society, March 21.—Mr. C. O. Waterhouse, Vice-President, in the chair.—Mr. R. McLachlan exhibited an extraordinary aberration of *Enallagma cyathigerum*, Charp. The remarkable feature consisted in the predominance of black over blue in the coloration of the abdomen.—Mr.

M. Burr exhibited a micropterous var. of *Xiphidium dorsale*, Latr., captured by Mr. Harwood near Clacton, remarking that the fact of this species presenting a macropterous form was apparently unrecorded hitherto.—Mr. W. J. Kaye exhibited *Nyssia hispidaria*, an asymmetrical specimen taken on Wimbledon Common.—Mr. C. O. Waterhouse exhibited a tube which formed the entrance to a nest of a *Trigona*, sent from Singapore by Mr. H. N. Ridley. He also exhibited a portion of the resinous mass formed within the trees by these bees, and stated that one of these masses sent from Penang by Mr. Ridley weighed 15 lbs. The true nest of the *Trigona* consists of an irregular mass of cells filled with honey, quite distinct from the resinous formation.—A paper was communicated by Mr. W. H. Ashmead, Assistant-Curator of the U.S. Nat. Hist. Museum, on "The aculeate hymenoptera of the Islands of St. Vincent and Grenada, with additions to the parasitic hymenoptera, and a list of the described hymenoptera of the West Indies."

Royal Microscopical Society, March 21.—Mr. A. D. Michael, Vice-President, in the chair.—A microscope presented by Mr. F. R. Dixon-Nuttall was referred to by Mr. Nelson, who said it was a microscope made by Benjamin Martin, dating about the year 1765. A solar projecting apparatus was packed in the same box; this was the invention of Dr. Lieberkühn, who brought it to London in 1740. Cuff improved it by adding the mirror in 1743. Mr. Nelson then called attention to a number of microscopes which had been sent for exhibition. The first noticed was by Plösel, and was kindly sent by Mr. C. L. Curties; this had already been illustrated in the *Journal*, but he asked the Fellows to inspect the coarse adjustment, which was very peculiar. The milled heads were of large diameter, a projecting stud was fitted on the inner side of each; from these studs descended a pair of links connecting them to similar studs fitted on to the sides of the body of the microscope; on turning the milled heads the studs moved through an arc and thus raised or lowered the body of the instrument. The next five microscopes were sent for exhibition by Messrs. Spiers and Pond. One, a French model, had a push-tube coarse adjustment and a short lever nose-piece fine adjustment. A vertical slot was made in the outer tube or sleeve to allow the fine adjustment to move up and down when the coarse adjustment was being effected. Another and smaller instrument was fitted with a simple mechanical coarse adjustment, which appeared to be a modification of the Plösel adjustment just described. The connecting links of the latter form were omitted; radial slots in the milled heads engaged the stud pins fitted on the sides of the body, so that when the milled heads were turned through a part of a circle the body was raised or lowered. In a yet smaller microscope there was an ingenious detail of construction in the method of securing the outer tube to the limb, by inserting the screws from the inside of the tube and screwing into the limb, a much superior plan to that of putting them in from the other side. There was likewise a diminutive microscope measuring about three inches high, of a cheap type. The next microscope was sent by Mr. Ernest Barker; it was a pocket form, the case measuring, when closed, $4\frac{1}{2}'' \times 2'' \times 1\frac{1}{2}''$. It was an ingeniously arranged little instrument, and very suitable for field work.—Mr. Nelson read an extract, sent by Mr. Jerome Harrison, of Birmingham, from Dr. Hooke's "Microscopium" (1678), describing a method of using convex lenses ("globules") by contact with water. Mr. Nelson thought it interesting to know that the immersion objective was not such a modern invention as was generally supposed. The chairman said this was a very interesting record, showing once more that there is nothing new under the sun. Mr. Nelson said Mr. Powell had just pointed out to him that these lenses of Hooke's differed from the immersion objectives of the present day, which had flat fronts, whereas in Hooke's lenses the water was applied to a convex surface, and so formed a sort of concave lens which corrected to some extent the chromatism of the glass.—Messrs. Swift exhibited a new pattern microscope, the upper portion of which was a replica of the Continental form, while the lower part was of the English type. The vertical axis was thrown more forward than usual, to admit of a larger stage being fitted.—Mr. Rousselot read a note in reference to a large selection of slides of new, rare and foreign rotifera which was exhibited under about thirty microscopes. Special reference was made to specimens of *Trochosphaera solstitialis*, *Apsilus lentiformis* and *Asplanchna berrieki* which is much like other species of *Asplanchna* in shape, but possesses a small glandular organ with the tube

opening outward, which is not known to occur in any other rotifer, and the function of which is quite unknown. In addition to this collection there were two specially well-mounted slides of *Stephanoceros* and *Floscularia* to show what can be accomplished in the way of preserving rotifers.

Geological Society, March 21.—H. W. Monckton, Vice-President, in the chair.—On a bird from the Stonesfield slate, by Prof. H. G. Seeley, F.R.S. The varied affinities of this large Carinate bird appear to lie midway between the ducks and geese on the one side, and the herons and flamingos on the other. It may be placed in a new family; but its characters are in all respects such as might have occurred in an existing bird. There is no indication of affinity to the *Archaeopteryx*, or that the bird diverged in any way from modern types.—The Lower Ludlow formation and its graptolite fauna, by Miss Ethel M. R. Wood. After dealing with the literature of the stratigraphical and palaeontological sides of the subject, the author passes to a full consideration of the sequence and character of the Ludlow rocks in the following localities:—The Ludlow district, the Builth district, the Long Mountain; and gives a briefer account of those of the Dee valley, the Lake district, Southern Scotland, Dudley, and the Abberley Hills. While the Wenlock shales are characterised by *Cyrtograptus* and by the *Flemingii*-type of *Monograptus*, in the Lower Ludlow shales the *colonus*- and spinose forms of *Monograptus*, such as *M. chimaera*, are abundant. The line between Lower and Upper Ludlow is drawn at the top of the Aymestry limestone. The Lower Ludlow rocks are divided into five graptolitic zones, which are not constant in character or thickness in the different areas.

Anthropological Institute, March 27.—Mr. C. H. Read, President, in the chair.—A discussion of "Native life and customs in Sarawak" was opened by Prof. A. C. Haddon, who exhibited a series of lantern-slides, made from photographs taken by members of the recent Cambridge Anthropological Expedition. The earlier ones illustrated the river scenery of the Baram district of Sarawak, and the way in which travel is accomplished in that region, while the remainder were mainly concerned with the domestic life of the natives. All the houses, as was shown in the photographs, are built on the banks of rivers, and are of great size, a village usually being composed of a single house or of a long string of intercommunicating houses. These are built on posts, 10 ft. or 15 ft. in height, and each consists of a long verandah in which is centred nearly all the social life of the community. Hanging from its rafters are usually trophies of skulls of the inhabitants' enemies; under the skulls a fire is kept burning and many sacred objects are associated with them, including stone implements which are handed down from father to son, and in some cases are looked upon as the teeth and toe-nails of the Thunder God. The verandah is often decorated with carvings and painted boards, and ornamentation of various kinds, according to the artistic genius of each tribe, is found on the implements and objects of every-day use. A partition, which runs the whole length of the building, separates the verandah from the dwelling-places of the various families, each of which inhabits a private set of rooms opening by one door into the verandah. Outside the houses are wooden images, posts, and sacred stones at which offerings are made on important occasions. The occupations of the natives were also illustrated.—Mr. C. Hose, resident of Baram, Sarawak, also showed some slides, and said, in reply to a question based upon the statements of Bock and other travellers, that cannibalism existed in Borneo, that there were cases in which human flesh was eaten, but he did not think they could be properly called cannibalism. Sometimes they cut off strips of flesh from their enemies, but these were not eaten, as some observers had too hastily concluded. On the contrary, they were stored in bamboos and used as an offering to the hawks from which the omens were taken. The occasions on which human flesh was eaten were cases of chronic illness in which a small piece, swallowed with great difficulty by the patient, was supposed to be curative. In Dutch Borneo the people did roast and eat human flesh, but only very rarely, and the practice had been stopped by the Dutch. When a male child about fourteen years old was very ill, it was thought proper to keep him alive, if possible, at the expense of a female life, which was less valuable; hence, as a last chance of saving his life, a sister would be sacrificed, and a small piece of the flesh given to the boy to eat. A large part of Mr. Hose's

valuable collection of native objects from Baram was exhibited during the evening.—At the forthcoming meeting, Tuesday, April 24, Prof. Haddon will give a similar account of the researches of the Cambridge Expedition in Torres Strait, and Dr. Rivers will describe his genealogical method of collecting social and vital statistics, which was applied with success in the same district.

Zoological Society, April 3.—Prof. G. B. Howes, F.R.S., Vice-President, in the chair.—Mr. G. E. H. Barrett-Hamilton contributed a paper, entitled “Notes on *Mus sylvaticus* and its Allies, Subspecies and Geographical Variations.”—A communication was read from Mr. Stanley S. Flower containing an account of the Mammals of Siam and the Malay Peninsula.—Mr. A. Smith Woodward communicated a paper, by Dr. Einar Lönnberg, on a piece of skin found along with the remains of *Gryppotherium* in Cueva Eberhardt, Patagonia. A detailed description and comparison of the specimen led to the belief that it belonged to the extinct horse—*Onhippidium*. Dr. W. G. Ridewood added a note on the structure of the hair bordering two equine hoofs, probably fetal, found in the same cave by the La Plata Museum expedition. The hair agreed in most respects with that described by Dr. Lönnberg, and thus seemed to confirm his determination.—Mr. C. Warburton exhibited and described a remarkable new Attid Spider (*Mantisatta trucidans*), the chief characteristic of which was the possession of predaceous front legs, the spines being so arranged as to form a prehensile weapon. It had been taken in Borneo.

Mineralogical Society, April 3.—Prof. G. D. Liveing, F.R.S., Vice-President, in the chair.—Prof. W. J. Lewis showed the application of Grassmann's method to the calculation of the angle between two poles.—Mr. R. W. H. T. Hudson gave a solution of the problem to determine the position of points and planes after a rotation through a definite angle about a known axis.—Mr. L. Fletcher described the methods employed in the chemical analysis of the Mount Zomba meteorite.—Dr. A. Hutchinson gave the results of a determination of the refractive indices of chalybite and diallogite.—Mr. G. T. Prior pointed out the close crystallographic relationship between hamlinite, florencite, beudantite and svanbergite, and showed that in chemical composition these minerals, together with plumbogummite (hitchcockite), all conform to formulae analogous to that of hamlinite if, in the case of beudantite and svanbergite, one molecule of P_2O_5 be regarded as replaced by two molecules of SO_3 , i.e. by S_2O_6 ; in conformity with this result the alkaline earth in svanbergite was found to be strontia and not lime.—Mr. Prior also contributed a paper on Ægyrine- (and Riebeckite)-Anorthoclase rocks from near Adowa, Abyssinia, which form a series strictly analogous to Brögger's “Gorudite-Tinguaita” series of the Christiania district, the more acid group containing quartz, and the more basic, nepheline.—Prof. H. A. Miers exhibited specimens of anatase and brookite from Tremadoc.

Mathematical Society, April 5.—Lieut. Colonel Cunningham, R.E., V.P., in the chair.—The following communications were made:—On the addition theorem for the Bessel functions, by Mr. H. M. Macdonald.—The orthopticloci of curves of a given class, by Mr. A. B. Basset, F.R.S.—The uniform convergence of Fourier's Series, by Prof. Love, F.R.S.—Extension of orthogonal and Boolean co-variants, by Major MacMahon, F.R.S.—A paper was also received from Mr. Bromwich, entitled “On Weierstrass's canonical reduction of a ‘schaar’ of bilinear forms.”—The chairman announced that the May meeting would be made “special,” in accordance with a resolution already made known to members.

MANCHESTER.

Literary and Philosophical Society, April 3.—Prof. Horace Lamb, F.R.S., President, in the chair.—A paper on “Aërial Locomotion” was read by Mr. Henry Wilde, F.R.S.

EDINBURGH.

Royal Society, March 19.—Lord Kelvin, President, in the chair.—Dr. Thomas Muir communicated three papers: (1) A development of a Pfaffian having a vacant minor; (2) the theory of alternants in the historical order of its development up to 1841; (3) Jacobi's expansion for the difference-product, when the number of elements is even. In the first paper, the expansion was obtained as a sum of partial products, each of which was a minor determinant multiplied by the com-

plementary minor Pfaffian of the original Pfaffian; and the third paper contained a proof of Jacobi's rule for expanding the difference-product $\zeta^2(a, b, c, \dots)$ as a series of partial products, each of which is a Permanent multiplied by a Pfaffian.—Dr. A. Galt read a paper on the heat of combination of metals in the formation of alloys, completing the work of previous papers on the same subject. It was shown that, in the formation of copper and zinc alloys, the heat of combination was negative for small percentages of copper; then, as the amount of copper was increased, it became positive, and obtained a maximum when the percentage of copper was about 38. For higher and increasing percentages of copper the value of the heat of combination gradually fell off to zero.

PARIS.

Academy of Sciences, April 2.—M. Maurice Lévy in the chair.—On a new gaseous body, sulphur perfluoride, by MM. H. Moissan and P. Lebeau. By the action of fluorine upon sulphur two fluorides of sulphur are produced, only one of which is absorbed by potash. The unabsorbed gas, which is very stable towards chemical reagents, has the composition SF_6 .—On the origin of the fossil trunks in the coal-measures, by M. Grand'Eury. From a study of the positions in the coal-measures in which *Cal. cannoeformis*, *Arthropitus* and *Calamodendron* occur, the author concludes that there can be no doubt that these Calamites are not in the position in which they originally grew, as is proved by the numerous adventitious roots surrounding the stems.—Report on a memoir of M. Torres, entitled “Calculating Machines.” The paper gives a complete theoretical solution of the problem of constructing algebraical or transcendental functions by machines. There is also an account of a machine actually constructed for the solution of certain types of algebraical equations of which frequent use is made.—Prof. Van der Waals was elected a Correspondant in the Section of Physics in the place of Sir G. G. Stokes, elected Foreign Associate.—Remarks on the criterium of Tisserand, by M. Goucy. A discussion of a theorem given by Tisserand to decide if two different orbits given by observation may or may not belong to the same comet, owing to the effect of attraction of a planet.—On differential equations of the third order with fixed critical points, by M. Paul Painlevé.—On an inversion of a double integral, by M. J. Le Roux.—On the geometrical applications of Abel's theorem, by M. Ch. Michel.—On a machine for solving equations, by M. Georges Meslin. The machine consists of a balance carrying upon its beams at varying distances from the point of support a series of solids of revolution, partially immersed in a liquid. If the depth immersed is x , the forces exercised upon the solids are represented by $x^n, x^{n'}, x^{n''}$; they act at distances p, p', p'' , and there is the force A acting at unit distance. Hence x satisfies the equation

$$px^n + p'x^{n'} + \dots + p''x^{n''} = A,$$

and the height x will be the solution of the equation. The solution of the equation $5x^3 - 4x^2 - 7x = A$ is worked out as an example.—On the property of certain bodies of losing their phosphorescence by heat, and of recovering it on cooling, by M. Gustave le Bon. Some radio-active barium-chloride was found to lose its power of phosphorescing at 200° , but to regain it on cooling. Quinine sulphate was found to behave in a similar manner.—Velocity of propagation of electro-magnetic waves in bitumen, and in bitumen-covered wires, by M. C. Gutton. It was found experimentally that in bitumen the electro-magnetic waves are propagated with the same velocity, whether they are guided by wires or not.—On the production of electrostatic images in sensitised plates, by M. W. Schaffers. The results obtained are of interest from the point of view of the exploration of an electric field.—On the influence of iron on the discharge of a condenser through an induction coil, by M. G. A. Hemsalech. The introduction of the iron diminishes, and finally destroys, the oscillatory character of the current, the changes being readily studied by the appearance of a Geissler tube placed in the circuit. The effect of the iron is analogous to that produced by the introduction of a large resistance.—On some optical peculiarities of Geissler tubes under the influence of a magnetic field, by MM. N. Egoroff and W. Georgiewsky.—The use of new radio-conductors for telegraphy without wires, by M. C. Tissot. The Branly tube is placed in a magnetic field, the lines of force of which are parallel to the axis of the tube, the powder being composed of some magnetic substance—steel, nickel or cobalt. The sensibility of the apparatus is thus greatly increased,

messages being readily received from a station 30 kilometres distant, and at the same time the regulation and adjustment of the tube is rendered much more simple.—The auto-cohesion of charcoal, and on the application of this discovery to telephonic apparatus for receiving the signals in wireless telegraphy, by M. Thomas Tommasina. A description of an instrument for receiving the Hertzan waves by means of a telephone. The apparatus is very sensitive, and works quite regularly even with such a strong current as three accumulators in series.—On a new radio-active element, actinium, by M. A. Debierne. The new element is obtained from the residues of pitchblende, and, except for its radio-activity, behaves as an impure thorium salt.—Solubility of a mixture of salts having a common ion, by M. Charles Touren. An experimental study from the Nernst point of view of the solubility of mixtures of potassium chloride and nitrate, and of potassium bromide and nitrate, the results being given graphically.—Action of hydrogen upon antimony sulphide, by M. H. Pelabon. The interaction of hydrogen and sulphide of antimony in sealed tubes at 440° showed that the composition of the gaseous mixture, hydrogen sulphide and hydrogen, was constant and independent of the amount of solid sulphide or of antimony present. At 625° the results were similar, and the inverse reaction of hydrogen sulphide upon antimony reached practically the same equilibrium.—On an arsenide of nickel, by MM. Albert Granger and Gaston Didier. Reduced nickel heated in a current of carbon dioxide carrying the vapours of arsenic trichloride gives an arsenide, Ni_3As_2 .—On the biphosphide of tungsten, by M. Ed. Defacqz. By the action of dry hydrogen phosphide upon tungsten hexachloride at 450° C. a new compound, WP_2 , is obtained, the properties of which are given. A chlorophosphide, a double phosphide, and another new phosphide were obtained from this.—On a new terpenic alcohol and its derivatives, by M. P. Genvesse. The new alcohol, pinenol, $\text{C}_{10}\text{H}_{16}\text{O}$, is obtained by the action of nitrous vapours upon pinene or essence of turpentine. A new oxime, pineonoxime, is obtained at the same time, the ketone corresponding to which is readily obtained by the oxidation with chromic acid of the pinenol.—Action of phenyl isocyanate and isothiocyanate upon the dibasic acids, by M. Elophe Bénech. The Haller reaction is a general one, and allows of the preparation of azelaic dianilide; phenyl isothiocyanate behaves like the isocyanate with fatty dibasic acids, with the exception of the malonic acids.—Influence of an active vegetation upon the formation of thuyone and thuyol, by M. Eugène Charabot.—Considerations on the differences which exist between the fauna of the Opisthobranchia of the ocean coasts of France and of the Mediterranean coasts, by M. A. Vayssiére.—On the zoological affinities of the Phoronidia and Nemertinae, by M. Louis Roule.—On the embryonic development of the Cestodia, by M. G. Saint-Remy.—Sounding and analysis of the sediment of Lake Galescu in the Southern Carpathians, by MM. de Martonne and Munteanu Murgoci.—On the strata near Bray, by M. Munier-Chalmas.—Contribution to the study of the antileucocytic serums and their action on the coagulation of the blood, by M. C. Delezenne.—On the fixation of alkaline bases in the mineral skeleton of the human foetus during the last five months of pregnancy, by M. L. Hugounenq. An analysis of the changes in the ratio of soda to potash in the mineral skeleton of the foetus from the fourth to the ninth month.—On the physiological properties of nitriles, by M. Edmond Fiquet. An experimental study of the toxic effects of injections of acetonitrile, sodium cyanacetate, cinnamic nitrile, and sodium α -cyanocinnamate.—Variations in the amount of iodine present in the thyroid gland of the newly-born under divers pathological influences, by MM. Charrin and Bourcet.—Experimental reproduction of caries of the teeth, by M. J. Choquet.—On a new pathogenic microbe in the rabbit, *Bacillus myophagus cuniculi*, by M. C. Phisalix. The bacillus is found in a rare disease of the rabbit, chiefly affecting the muscles.—Heterotopic differentiation. The teratological process, by M. Étienne Rabaud.—Therapeutic action of the acid phosphoglycerides, by M. G. Bardet.

AMSTERDAM.

Royal Academy of Sciences, February 24.—Prof. H. G. Van de Sande Bakhuyzen in the chair.—Prof. Van Wyhe read a paper on a simple and quick method of preparing picrocarmine.—Prof. W. H. Julius read a paper on solar phenomena considered in connection with anomalous dispersion

of light.—The following papers were presented for publication in the *Proceedings*:—Entropy of radiation (ii.), by Mr. J. D. van der Waals, jun.—A paper on the formation of trisubstituents of benzol from disubstituents, by Prof. A. F. Holleman.—Enantiotropy of tin (iv.), by Dr. Ernst Cohen.—Inquiries into the system $\text{TlNO}_3 + \text{AgNO}_3$, by Dr. C. van Eyk. Melted mixtures of the two salts successively deposit: rhombohedral and then rhombic TlNO_3 on the TlNO_3 side, and rhombohedral and then rhombic AgNO_3 on the AgNO_3 side, while out of the mixtures of 48–52 mol. per cent. the double salt AgNO_3 is deposited, which melts at 83°. Below 27° this salt undergoes a change, either by passing into another modification or by splitting up into its components.—Rational curves in space, by Prof. Schoute.

DIARY OF SOCIETIES.

WEDNESDAY, APRIL 18.

ROYAL MICROSCOPICAL SOCIETY, at 8.—Demonstration on the Structure of some Palaeozoic Plants, with Sections of the Plants thrown on the Screen: Wm. Carruthers, F.R.S.

THURSDAY, APRIL 19.

LINNEAN SOCIETY, at 8.—Alpine Vegetation of Tibet and the Andes: W. Botting Hemsley, F.R.S., and H. H. W. Pearson.—On some Mosses from China and Japan: E. S. Salmon.

FRIDAY, APRIL 20.

EPIDEMIOLOGICAL SOCIETY, at 8.30.

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